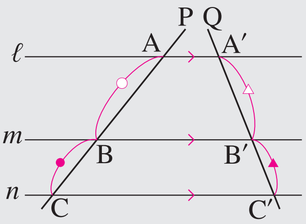
第 32 講・平行線と比

例題 1　平行線と比

ポイント

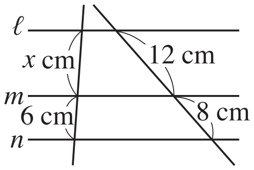
● 次のように，平行な 3 つの直線 ℓ，m，n が，直線 P とそれぞれ A，B，C で交わり，直線 Q とそれぞれ A′，B′，C′ で交わるとき，AB : BC = A′B′ : B′C′ が成り立つ



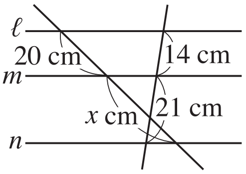
問題

次の図で，$\ell /\!/ m /\!/ n$ のとき，x の値を求めなさい。

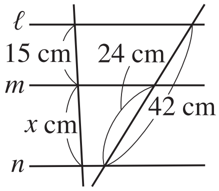
(1)



(2)



(3)



解答

(1)　$x : 6 = 12 : 8$

$= 3 : 2$

よって

$x \times 2 = 6 \times 3$

$2x = 18$

$x = \mathbf{9}$　…(答)

(2)　$20 : x = 14 : 21$

$= 2 : 3$

よって

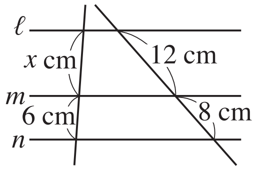
$x \times 2 = 20 \times 3$

$2x = 60$

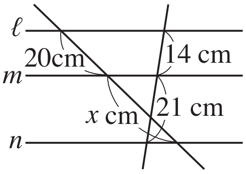
$x = \mathbf{30}$　…(答)

MEMO

(1)



(2)



(3)　$15 : x = (42 - 24) : 24$

$= 18 : 24$

$= 3 : 4$

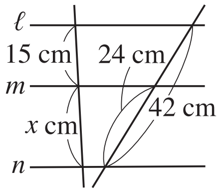
よって

$x \times 3 = 15 \times 4$

$3x = 60$

$x = \mathbf{20}$　…(答)

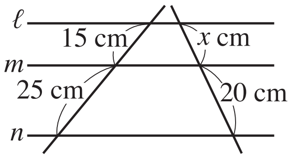
(3)



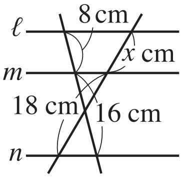
確認テスト 1

次の図で，ℓ // m // n のとき，x の値を求めなさい。

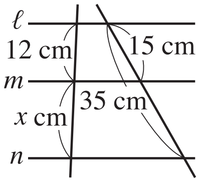
(1)



(2)



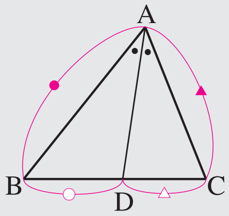
(3)



例題 2　角の二等分線と比

ポイント

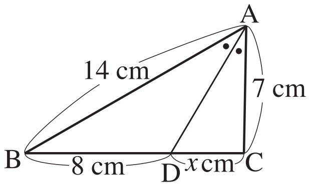
● 右のような △ABC で，∠A の二等分線と辺 BC との交点を D とすると，AB : AC = BD : DC が成り立つ



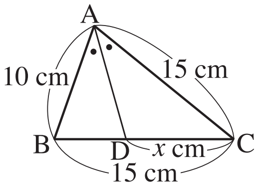
問題

次の図の △ABC で，点 D は ∠BAC の二等分線と辺 BC との交点であるとき，x の値を求めなさい。

(1)



(2)



解答

(1) AB : AC = BD : DC

$14 : 7 = 8 : x$

$14 \times x = 7 \times 8$

$14x = 56$

$x = \mathbf{4}$ ・・・(答)

(2) AB : AC = BD : DC

$10 : 15 = (15 - x) : x$

$10 \times x = 15 \times (15 - x)$

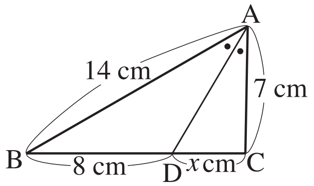
$10x = 225 - 15x$

$25x = 225$

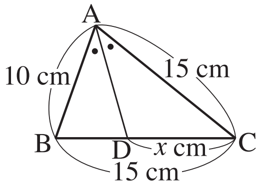
$x = \mathbf{9}$ ・・・(答)

MEMO

(1)



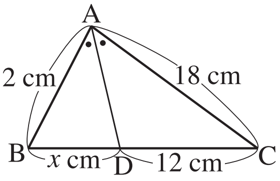
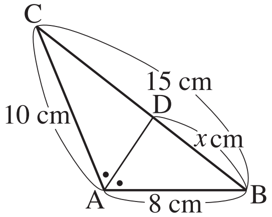
(2)



確認テスト 2

次の図の △ABC で，点 D は ∠BAC の二等分線と辺 BC との交点であるとき，x の値を求めなさい。

(1)



(2)